Workforce Development Strategies:
Cluster Background Report

USAID / Egypt

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For further information regarding this report, please contact

PRICEWATERHOUSECOOPERS

Tessie San Martin
(703) 741-2422
tessie.san.martin@us.pwcglobal.com

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INTRODUCTION

At the highest levels, Egypt recognizes the need for human capital development in order to increase its competitiveness in the global economy. In a July 1999 meeting with Vice President Gore, President Mubarak asked for U.S. assistance in three areas, one of which was human resource development. As a result of this conversation, and analysis already conducted, USAID/Egypt has included in its strategy a human capital development strategic objective that strives to obtain concrete results in this area.

In response to the Mission's new strategic objective, a team from PricewaterhouseCoopers and SRI International was selected to operationalize parts of this Mission strategy. USAID/ Egypt has agreed to undertake the Workforce Strategic Planning Process in the following three clusters: 1) agribusiness; 2) tourism; and 3) information technology. The Mission identified these clusters as arenas where training and human capital issues are most likely critical constraints to development and growth.

The PricewaterhouseCoopers / SRI International Workforce Development Strategies Team (WDS Team) conducted its first mission trip to Egypt from September 8, 1999 through October 1, 1999. The purpose of this trip was to hold initial interviews and focus groups with industry cluster stakeholders in order to 1) collect data on segments of each cluster; 2) develop stakeholder relationships in order to discuss pressing workforce development needs; and 3) make determinations of how to demarcate each cluster.

The purpose of the report is to highlight the methodologies the WDS Team will use throughout the project and to demarcate the chosen clusters. The report is divided into the following three sections:

- ***Workforce Development Strategic Planning Methodology:*** Section 1 outlines the conceptual framework and methodology the WDS Team will use throughout this project. It describes the components of workforce development and the goals of the larger project. This section also describes how the WDS Team will use parts of the cluster analysis tool to group similar segments of the Egyptian economy in order to provide priorities and actions that will demonstrate some true effect within industries. Section 2 provides a closer look at the methodology the WDS Team used during the first field mission trip to demarcate the cluster and select "high-impact" segments for this process.

- ***Egyptian Cluster Demarcation:*** Sections 3 through 5 describe the specific clusters the WDS Team is working with in Egypt. Each section demarcates the larger cluster, and then highlights the "high impact" segments that will be included in this cluster analysis focused specifically on workforce development issues. Each section also provides a brief overview of the global market trends that are influencing the Egyptian clusters' competitiveness and some of the workforce impacts of these trends.

- ***Supply-Side Methodology:*** Section 6 provides and overview of the approach the WDS Team is taking to explore the linkages between the private sector and training

providers/educators. This section outlines five key areas the WDS Team will explore to assist the clusters' supply-side in providing workers with the skills demanded.

The Path Ahead

Although this project has just begun, it is important to envision the desired outcome to ensure the WDS Team is moving forward on the correct path. The overarching goal of this project is to create a participatory stakeholder process that assists cluster stakeholders to plan and take workforce development actions that will build and sustain cluster competitiveness. In order to reach this desired outcome, the remainder of the project can be envisioned in four discrete steps:

1. Cluster Analysis & Mapping (October 1 – October 24)

Using the raw data and information collected during the first mission trip (as well as follow-up information that will be collected through further interviews and desk research), the WDS Team will focus on creating a compelling story that highlights the workforce development issues within each cluster. This brief analysis will include a workforce development SWOT analysis, a demand and supply view of the cluster, gender assessment, and an overview assessment of the linkages in each cluster. This analysis will be shared with cluster stakeholders at the workshops in November.

2. Cluster Stakeholder Priming (October 1 – November 5)

Private sector planning, prioritization, and commitment to workforce development actions requires the WDS Team to quickly identify key cluster stakeholders who understand the importance of workforce development, and can be champions within the clusters. Over the next month, the WDS Team will identify these stakeholders and begin to identify discrete tasks that can be taken to achieve some of the cluster's workforce priorities. Taking this step prior to the workshops will be crucial to ensure that the cluster has the core leaders to take action forward.

3. Stakeholder Strategic Planning Workshops (November 5 – November 15)

The WDS Team will hold three stakeholder strategic planning workshops in early November (one for each cluster). The WDS Team will invite high-level stakeholders from each cluster to the workshops. The agenda will include a presentation of the cluster analysis, a panel of key private sector stakeholders, and smaller break-out groups that will plan how to operationalize some of the cluster's workforce priorities.

4. USAID Recommendations & Follow-up (November 15 – TBD)

Taking the "action vision" created by cluster stakeholders at the workshops, the WDS Team will make recommendations to USAID on actions it may choose to take to assist the private sector in tackling its workforce priorities. In order to leverage donor funding to compliment private sector action, these recommendations will focus on the areas where the private sector has already committed time and funding.

1. WORKFORCE STRATEGIC PLANNING PROCESS METHODOLOGY

The Workforce Strategic Planning Process is a tool designed to help policy-makers, educators, and industry stakeholders understand how competitiveness and workforce development are linked in a sector. It is a tool to generate productive dialogue among the stakeholders, leading to actions and commitments that strengthen the linkages between the needs of industry and workforce development policies, to the benefit of both. The following section outlines two key elements of the Workforce Strategic Planning Process methodology.

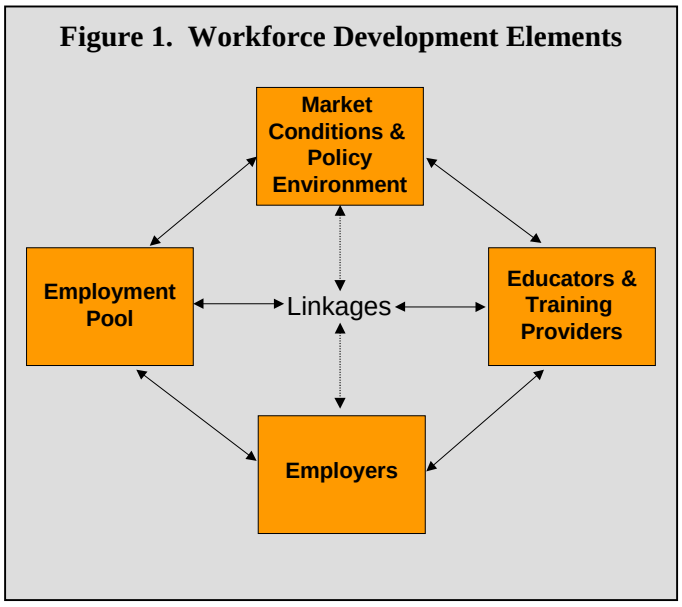
1.1 Focused on Industry Clusters

Just as countries are diverse, workforce development issues vary throughout Egypt. As a result, the Workforce Strategic Planning Process does not analyze the entire economy. Rather, it focuses on distinct industry clusters that share common characteristics.

An industry cluster is a collection of interconnected companies and institutions that rely upon one another to achieve and sustain competitiveness. An industry cluster, therefore, contains not just the relevant industry members, but also supporting institutions such as educators, training providers, parts suppliers, distribution and transport companies, and financing organizations serving the industry.

This cluster analysis tool can be used to identify a wide-range of strengths and constraints to competitiveness. However, within the context of the Workforce Strategic Planning Process, this cluster tool is focused solely on the human capital factors affecting competitiveness.

Figure 1. Workforce Development Elements



Specifically, the focus of the Workforce Strategic Planning Process is on institutional linkages. The methodology analyzes workforce development needs in a cluster in terms of four elements: employers, employment pool, market conditions and policy environment, and educators / training providers *(See Figure 1)*. The overarching objective is to create and sustain the linkages between the four workforce elements in the cluster.

Although these elements are broadly titled, each contains numerous layers that can be analyzed differently depending on the current environment in question. For example "market conditions and policy environment" could include the demands of the market, the policies that support or hinder workforce

development, and the social and cultural contexts that need to be included in any workforce analysis.

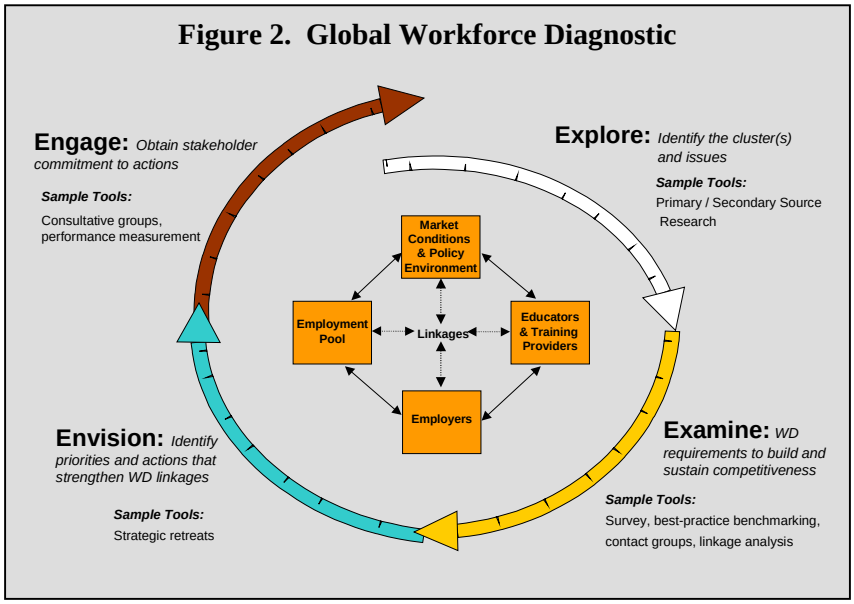
The Workforce Strategic Planning Process examines the strength, duration, and depth of the linkages among the four elements, and how each contributes to or detracts from competitiveness within the industry cluster. It provides a methodology for systematically evaluating the degree of alignment between what the market demands, employers require, training providers offer, and what the labor pool brings in terms of skill endowment. By looking at each of these elements, industry, policy-makers, educators, training providers, and actual and potential employee representatives can better visualize and evaluate options for improving workforce adaptability to changing requirements.

1.2 A Self-Winding Process

The methodology is a process, not just a product. It is designed to create a common understanding among industry players, educators, training providers, and policy-makers regarding the key workforce development issues affecting competitiveness in each industry cluster. This shared vision sets the stage for stakeholders to initiate actions that support the overall competitiveness of the industry cluster.

The process can be visualized as an evolving spiral. The spiral consists of four stages. Once the final stage has been completed, the first begins again. However, stakeholder participation is crucial in each stage. All of the stages employs a specific set of analytic and dialogue management tools. Each stage produces an output. The output from one stage provides the basis on which the subsequent stages will be built. *(See Figure 2, Dynamic Workforce Diagnostic).*

Figure 2. Global Workforce Diagnostic



During this first mission trip, the WDS Team has focused on the Examine stage collecting data and building stakeholder relationships through individual interviews, focus groups, and primary and secondary research. In later stages of the process, this information will then be analyzed and vetted with stakeholders in order to identify workforce development priorities, develop discrete actions that are needed to accomplish these initiatives, and then working with cluster stakeholders to achieve commitment to these actions.

2. CLUSTER DEMARCATION METHODOLOGY

As noted in the previous section, the Workforce Strategic Planning Process utilizes a cluster approach in viewing workforce issues. In July 1999, USAID/Egypt chose to pursue this process in three clusters: 1) agribusiness; 2) tourism, 3) information technology. The following section outlines the methodology the WDS team used to demarcate each cluster and then prioritize the segments it will target as high-impact areas for competitiveness.

2.1 Cluster Segment Selection Process

The WDS Team's first step in the demarcation process was to identify all of the possible segments that could be considered as part of each cluster. This provided the WDS Team with a cluster population, which we could then begin to narrow for this task. Following this cluster segment demarcation, the WDS Team utilized a rigorous selection process to determine *which segments of the cluster supply chain* should be the *principal focus* of the Workforce Development Strategic Planning Process exercise.

This initial segment selection does not preclude that at a later stage, broader segments of these clusters -- as well as other industry clusters -- could be targeted for workforce development strategies. These pilots could serve as models for future replication in other segments and clusters.

2.2 Segment Criteria

The WDS Team used the following criteria in order to select segments for high-priority focus in this project:

1. Significant potential for employment growth / large workforce requirement;
2. Workforce skills enhancement is critical to viability of cluster, but is not currently fully addressed by existing donors, GOE, or private training institutions and providers;
3. Strong private sector interest;
4. High-value added (i.e. critical to the overall competitiveness of cluster supply chain);
5. High-growth potential in Egypt; and
6. Strong potential for exporting.

In order for a segment to be chosen as a "high-impact" segment, it needed to meet each of the first five criteria, with the heaviest weight being put on criteria one through three. In terms of meeting criteria six -- export potential -- the WDS team discovered that each cluster had its own particular set of circumstances concerning the potential to export that helped to determine if the segment should be selected.

For example, in the IT cluster, Egypt is currently a significant net importer of IT equipment and services. Therefore, in order to reduce the trade deficit in this sector and build strong domestic demand, several segments which can be oriented towards the local market were selected including: software development; database administration, and networking systems.[1]

[1] Strong domestic demand is one of the Michael Porter's pre-conditions for cluster competitiveness.

In the tourism cluster, the overwhelming source of revenue in nearly all of the supply chain segments is from foreign tourists. For example, the hotel and accommodations segment earns the vast majority of its sales revenues from foreign visitors. In addition, many other segments of the tourism supply chain such as tour operators, airlines, restaurants, and charter buses earn most of their revenues from foreign visitors. As a result, most of the segments of the tourism supply chain meet the export potential criteria.

In the agribusiness cluster, most, but not all, of the segments selected are oriented towards the export market. Egypt has proven *comparative advantage* in producing many of the basic commodities in this sector. These comparative advantages include good location, natural resources, and low-cost labor. The principal segments selected for this project are high-value areas where Egypt could compete on the basis of *competitive advantage.*[2]

In addition to the six listed criteria, it was also important in the agribusiness cluster to build on the significant work of existing USAID projects. In these projects, there are several agribusiness segments in which some aspects of workforce skill development are currently being addressed. For this reason, the WDS Team was careful to select segments that complement current efforts and activities underway.

The remainder of this report is dedicated to looking specifically at the chosen clusters. Each cluster section is broken into four parts:

- Demarcating the Sector
- High Impact Segments
- Global Trends and Workforce Implications
- Skills Gap: Initial Stakeholder Observations

2 Competitive advantage factors are not inherited, but can be created, including *skilled human resources* and *knowledge resources.*

3. AGRIBUSINESS CLUSTER

Within the agribusiness cluster, the WDS Team seeks to build on USAID/Egypt's existing agribusiness relationships. As a result, although the WDS Team measured each agribusiness segment against the stated criteria, the WDS Team also looked at segments where the Workforce Strategic Planning Process, USAID/Egypt projects, and private sector interest might converge.

3.1 Demarcating the Cluster

The full population of an agribusiness cluster in Egypt can be broken into two main categories: 1) processed foods; and 2) agricultural support services. The tables below provide an outline of the segments in each of these categories.

Category I: Processed Foods Segments

Fruits/ Vegetables	Dairy Foods	Field Crops	Meat/Poultry/Fish	Specialty Foods
Fresh fruits & vegetables	Dairy products	Flour	Meat	Jams & jellies
Frozen fruits & vegetables		Cereals & grains	Processed meat	Confectionery
Dehydrated fruits & vegetables		Maize	Poultry products	Pasta
Canned fruits & vegetables		Barley, grain, rice,	Fish /fish products	Biscuits
Mushrooms		Breads	Processed fish	
		Sugar		

Category II: Agricultural Services Segment

Equipment for Plant Production	Equipment for Animal Production	Storage & Distribution	Process Equipment	Support
Fertilizer	Cattle/horse breeding farm	Storage & handling	Sugar cane processing	Consulting & advisory services
Chemicals	Pig/sheep breeding	Distribution	Sugar refinery	Research
Seeds	Animal feed	Refrigeration	Grain & maize	Co-operative ass.
Tractors / power cultivators	Fish farming	Packaging	Flour, semolina, rice milling	Agricultural business software
Ploughs	Dairy farm		Bread-making	
Harrows			Cake & biscuit	
Fertilizer spreaders			Commercial bakery	
Irrigation and watering			Sugar & confectionery	
Crop protection			Syrup, candied, fruit, jam plants	
Balers			Chocolate making	
Cereal harvesting / processing			Meat processing / sausage	
Crop processing			Butchery	
Mushroom farm			Fish processing	
			Dairy industry	

3.2 High Impact Segments

The WDS Team examined each of these segments against the criteria presented in Section 2. As the table below indicates, five high-impact segments were selected to be the principal focus of the Workforce Development Strategic Planning Process.

High-Impact Segment	Average # of Employees in Company
Processed Foods	NA
Fresh Fruits & Vegetables	100
Frozen Fruits & Vegetables	487
Dehydrated Fruits & Vegetables	226
Dairy Products	68

These segments were selected because they are the chief high-valued added segments of the agribusiness cluster, and they are critical to the overall competitiveness of the cluster supply chain. All of the segments except dairy also are segments where Egyptian firms have penetrated the competitive export markets.

Fresh & Processed Fruits and Vegetables:
Fruit and vegetable production was selected because it is one of the largest agribusiness segments and represents the highest market value segment of the Egyptian Agriculture Industry. The export business as well as the local market is expected to grow faster than other commodities.

Successful operations of fresh and processed produce require higher technology skills, more advanced quality control program than those of field crops. Leading industry representatives recognize the need for educated workforce, and interested in training programs,

Fresh fruits and vegetables already enjoy attractive export markets, with excellent growth potential. However, doing successful export business will require compliance with international regulations, standards, food safety issues, and application of advanced packaging systems, all of which require world-class technical know-how. Moreover, to succeed in the international business arena advanced market skills are required, that are currently lacking in Egypt.

Dairy Industry:
Presently the dairy industry utilizes 40% of the arable land of Egypt. At the same time consumption of milk is much lower than elsewhere, even when compared to other Mid-Eastern countries. Moreover, 85% of the milk is sold unprocessed, and only a small portion is packed in shelf-stable containers, or processed into cheese, yogurt, butter and other dairy products. This situation may be changing, as the nutritional quality of milk is recognized, and more effluent consumers will be looking for shelf-stable milk segregated by fat content, fortified by essential nutrients and will be consuming breakfast cereals with milk, ice cream, cheese and other dairy product.

The dairy industry needs to prepare for the growing market of processed milk. The industry must develop personnel with technical skills, and have access to marketing experts who can promote the consumption of milk products. As a result, this segment was chosen as a high-impact segment.

Since all of the segments chosen are potentially high-value, competitive products within the cluster, workforce skill enhancement is critical to these industries. Packaging, quality control, marketing, plant sanitation, safety, and marketing are some of the priority activities for firms to be competitive in these segments. Workforce development is a high priority for these activities since progress in these competitive areas is generally only made through well designed training and workforce skill improvements.

3.3 Global Trends & Workforce Implications

Many players in Egypt's agribusiness cluster are already keenly aware of the trends in the global marketplace that are affecting the competitiveness of their products and services. These key trends help to point to areas where workforce development strategies can assist this Egyptian cluster to increase its competitiveness.

Globalization

Leading food processors, food ingredient suppliers, retailers and fast food service companies have become multinational organizations (e.g. Nestle, Unilever, Safeway, Burger King, etc.). Moreover, reduction in tariff and non-traffic barriers benefits multinational companies (GATT, EU,). One of the results of this business globalization is the internationalization of tastes for processed food. The same popular processed foods are consumed around the world (Kellogg's cereal, Nabisco's Ritz cracker, Heinz' ketchup, and Campbell soups.)

These companies are interested in the delivery of large quantities of standardized produce, and demand compliance to international standards and regulations. They require that suppliers comply with strict quality control procedures, such as HACCEP, and ISO-9002. Representative of the buyers will visit the food plants of the suppliers to assure strict sanitary procedures, and record keeping.

Many of these multinational companies such as Nestle, Unilever, Burger King, and McDonalds have establishments in Egypt. These companies are typically operating in competitive, high-growth segments of the industry. Many new jobs will be created in these segments over the next ten years. These companies and their customers require product standardization, quality control, good hygiene, and outstanding customer service, among other business practices. These business practices in turn translate back into specific high standard skill set requirements for Egyptian workers entering this industry.

Ease of Preparation

Presently only 30% of the Egyptian population is purchasing processed food, and the rest are buying only food staples. This situation will change dramatically as women in the workforce increase and families become more affluent. The preference for convenience and speed of preparation, such as prepared or packaged fresh produce and ready-to -eat meal preparations will intensify. Also, more meals will be consumed away from home in fast food restaurants, and supermarket stores are selling take-out prepared food.

Urbanization of the population is already taking place. Presently 50% of the population already living in cities, and the majority of this population is under 20 years of age. These segments are more receptive to advertisements and will tend to purchase more sophisticated processed food. The city population is also interested in fresh produce. As the populations move further from farms, technologies that allow long-distance distribution of fresh produce are advancing. Such produce include fresh, peeled and diced fruits packaged in controlled atmosphere containers, shredded salad mix preparations, and a number of other easy-to-prepare commodities. The rising middle classes in developing countries such as Egypt creates attractive markets for higher-value processed and prepared foods and snack foods.

The expected high growth rates in prepared and snack foods in Egypt creates increased demand for the skill sets required of workers in these segments of the industry including food plant sanitation, process control, quality assurance product R&D, machinery maintenance, and packaging.

Ethnic Cuisine

While the over-all market represents only slow growth in the industrialized countries, the composition of the finished products are undergoing significant changes. Increasing popularity of ethnic food creates new opportunities. Demand for ethnic dishes started with the popularity of Italian cuisine, and has expanded to other ethnic food choices such as Chinese, Thai, Mexican, Middle Eastern and other ethnic dishes. Moreover, frequent choice of ethnic dishes is moving from fine restaurants to the dynamic fast food franchises, and to home cooking.

The high international growth in demand for ethnic foods creates special niche market opportunities for Egyptian firms to export ethnic processed foods. The workforce skill requirements for food processing firms to enter these export markets include food plant sanitation, product R&D, machinery maintenance, packaging, marketing, brand development, and logistics management.

Consumer Health Issues

Consumers' concern for food safety is now an issue in every country. Recently an incidence of Salmonella infestation of poultry in Cairo was front-page news. Unauthorized use of preservatives in unprocessed milk was reported in Egypt, and also high levels of pesticide residues may occur in fruits and vegetables. Although organic farming is not yet expected in Egypt, educated consumers express concern about dangerous contaminants in food. These incidences put a great pressure on food plant sanitation, process control and quality assurance.

It is likely that the adverse publicity in Europe for genetically modified crops will spread to Egypt in the foreseeable future. Egypt enjoys large export markets for fresh and processed potatoes, one of the crops where genetically modified varieties are common. This could affect the potato export business of Egypt, and perhaps even the local market.

In addition to what consumers do not want in their food products, there is a new and powerful emphasis on healthier ingredients (low-fat, low salt and no preservative) they do desire in processed food. Consumers increasingly read food labels and avoid additives with chemical sounding names, synthetic colors, and flavors. Organically grown and natural food is considered superior by an increasing number of consumers and they are willing to pay much higher price for such products.

New food products designed to prevent or even cure diseases are being introduced around the globe in great numbers. Japan and Germany are leaders in this movement. At the same time in the United States a new product category known as "Nutraceuticals" are being discussed by the leading food processors. Herbal preparations, antioxidants, and other newly discovered physiologically active compounds (e.g. iso-flavones in soybean, etc.) extracted from plants are introduced by mainstream marketers. The health conscious and effluent aging population fuels interest in these preparations. Also, food preparations that enhance physical performance (sport-drinks, etc.) are becoming popular.

This emphasis on safer, healthier foods will place great pressure on Egyptian firms to emphasize workforce skills such as food plant sanitation, process control and quality assurance.

3.4 Skills Gap: Initial Stakeholder Observations

Through interviews and focus groups during the first mission trip, cluster stakeholders sighted numerous concerns and constraints to the cluster's workforce development and ultimately to its competitiveness. The following observations are not in any particular order of priority, and several need to be verified through further interviews and research. The WDS Team presents them in this section to provide some context to issues heard during the first mission.

- ***Management Development:*** Outside sources of management training exists but do not meet the needs of food executives.

- ***Attitude:*** Numerous stakeholders referred to a lack of employee motivation at all levels – from management to the plant floor. Many stakeholders believe that changing the workforce's behavior should be a priority, and programs to do this are needed. However, stakeholders were not able to envision the types of programs. One stakeholder felt he would rather train new people, than retrain present employees with bad habits.

- ***Technology Training:*** There is some good technology training available. For example, the Food Research Institute, which is part of the Agriculture faculty at Cairo University,

has several education programs. FRI graduates are able to attend in short courses offered several times every year on various technical subjects.

- ***Train the Trainers:*** Members of the Horticulture Export Improvement Association indicated urgent need to train trainers. The industry is willing to invest in good training programs.

- ***Training Centers:*** Horticulture stakeholders believe that training centers eventually should be established in four regions. They believe trainers are needed in the local region – not from a central location. The following is one idea on training centers put forth by stakeholders:
  - Start with one center, proposed in Sadat City, with high concentration of people, and close to important farming.
  - Choose to model training in basic farm requirements such as tractor maintenance, pruning, preparation of spraying material, and equipment.
  - Length of the instruction:1 year
  - Participants should pay a fee (to establish serious commitment)
  - Issue certification at the completion of the course

4. TOURISM CLUSTER

The Tourism Cluster represents an area with significant growth potential in its competitiveness. Stakeholders and researchers have flagged workforce development as a major component to reaching this desired state. Historically, USAID has not conducted projects within the larger tourism cluster. However, the Egyptian Center for Economic Studies (ECES) completed a general tourism cluster report in the summer of 1999. As a result, the WDS Team has worked closely with ECES to coordinate interviews and focus groups. The following sections outline how the WDS Team is demarcating the cluster and the trends that will impact its competitiveness and thus influence its workforce development strategies.

Egypt's tourism cluster resembles other international tourism clusters in that it is made up of a series of interrelated, yet distinct, industries. Overall, the travel and tourism cluster is responsible for 2.5 million jobs – 14.5% of total employment – and 11.3% of Egypt's Gross Domestic Product (GDP). According to a recent study by ECES, the effects of visitors spending on employment can be summarized as follows:

Jobs Effect of Visitors Spending (1994)

Sector	*Direct*	*As a %*	*Indirect*	*As a %*	*Total*	*As a %*
Hotels and restaurants	355,565	32.9	718,915	51.0	1,074,480	43.2
Real estate and housing	35,754	0.5	24,498	1.7	30,252	1.2
Transportation	494,018	45.7	81,528	5.8	575,546	23.1
Locally produced goods	41,547	3.8	78,906	5.6	120,454	4.8
Entertainment and cultural services	116,758	10.8	379,708	27.0	496,467	19.9
Social and society services	5,081	0.5	65,758	4.7	70,839	2.8
Retail services	62,502	5.8	59,043	4.2	121,545	4.9
Total	*1,081,226*	*100.0*	*1,408,356*	*100.0*	*2,489,582*	*100.0*

The table provides the WDS Team with some context as to the cluster segments acting as the greatest employers. The challenge now is to find more detailed workforce development answers to key questions. For example, of the 1,074,480 jobs in "hotels and restaurants", how do these break-down in terms of levels (managerial, supervisory, technical, support staff)? What skills are needed in these positions? How does the industry fill these positions? These are the types of workforce development details that the WDS Team is continuing to pursue in its research, interviews, and focus groups.

4.1 Demarcating the Cluster

In attempting to demarcate Egypt's tourism cluster, the WDS Team has classified the segments into four categories:

- ***Attractions*:** Museums; Archeological Sites; Beaches/Resorts; Natural Attractions; Sporting Attractions; Entertainment (shows, casinos, nightlife).

- ***Facilitating Industries*:** Hotels and Accommodations; Restaurants; Domestic and International Transportation; Travel Agencies; Travel Operators; Travel Guides.

- ***Related and Support Industries***: Cleaning Services; Catering Services; Food Producers; Linens; Advertising; General Merchandising; Others.

- ***Cluster Foundations***: Training Providers; Banks and other Financial Institutions; Government and Tourism Associations; Promotion Organizations.

4.2 High Impact Segments

The current project's overall objective is to increase the competitiveness of the tourism industry through actions that upgrade the cluster's human resources capabilities. The ultimate goal, of course, is to create sources of sustainable employment for Egypt's ever-expanding labor force. Based on the criteria established in Section 2 of this document, the following four segments have been selected for this project:

- Hotel & Accommodations
- Travel Guides
- Restaurants
- Promotion Organizations

- ***Hotel & Accommodations***

Hotels and Accommodations is the most important segment in terms of size in the cluster. This is reflected both in the size of its labor force as well as in the share of tourist expenditures on hotels when compared to overall expenditures.

This segment represents the crux of the tourism cluster. Hotels provide a necessary service. For the tourism cluster, hotels are an irreplaceable component, without which visits would be impossible. Visitors need the services of hotels and other accommodations if they are to stay at any destination beyond one day.

Hotels act as a catalyst for the development of the entire cluster. They engage in promotional activities in order to maintain profitable occupancy rates, thereby providing customers for all other segments in the tourism cluster. Hotels managed by international chains have the marketing skills and resources to promote their locations to the international market.

Hotels act as cluster anchors. International hotel chains tend to bring with them a network of support firms, including travel agencies, tour operators, and even transport companies. These in turn generate employment of there own, and engage in their own promotional efforts to bring visitors to the particular region where they are located.

- ***Travel Guides***

Without adequate travel guides, particularly those with good language skills, visitors are not able to visit attractions. This is particularly important in Egypt, where a large proportion of tourism is archeological/historical, where interpretation of attractions' significance is fundamental. (For example, there seems to be a lack of qualified Japanese travel guides, which leads to the difficulty in attracting Japanese visitors.) Also, given the projected growth in ecotourism, there may be a need for instructing guides on local natural attractions.

- ***Restaurants***

Restaurants are a major source of employment for the tourism cluster and the country. Moreover, good restaurants are a significant component for an attractive nightlife, and therefore serve as attractions in their own right. In Egypt, there appears to be a lack of qualified people serving in this industry, including chefs, kitchen aids, winemasters, bartenders and waiters. Finally, given the strong linkages between restaurants and hotels, training of restaurant personnel would benefit hotels as well. In Egypt where the lack of nighttime entertainment for tourists exists, a good restaurants segment can begin to fill this void.

- ***Promotion Organizations***

Egypt appears to suffer from a serious lack of qualified promoters and marketers, both at the private and government level. This is a key link between having attractive assets and actually receiving an attractive number and type of visitors. While not as clearly defined as other segments, promotion organizations can include the government promotion institution, as well as the private sector tour operators, which are also a facilitating industry. Improving promotion organization is likely to increase national tourism receipts, thereby having an exponential effect on the workforce.

4.3 Global Market Trends & Workforce Implications

The tourism industry is driven by several long-term market trends that directly shape the nature of supply and demand. These include:

- ***Wealth:*** Growing incomes allow more people to travel. Travel was once a preserve for the rich, but now more socio-economic groups participate in tourism. World and regional economic growth will continue to increase the demand for travel services.

- ***Education:*** There is a direct link between level of education and proclivity to travel. The more education people receive, the more likely they are to seek new experiences, cultures and sights. In the MENA region, the percentage of males of age attending high school rose from 52% in 1980 to 65% in 1993. There is a potential that this higher education level will assist in increasing the regional demand for tourism.

- ***Infrastructure/Technology****:* Advances in avionics are facilitating travel over long distances. This allows for weekend travel across countries, which in turn increases competition among destinations. Similarly, the Internet is changing the nature of travel

information exchange. It is much easier for removed destinations to promote themselves, and to provide travel and accommodation booking services.

- ***Deregulation of Airlines:*** This long-term trend is increasing competition among transportation providers, lowering the price of airfares, and increasing the frequency of travel. This trend has started in the United States, but has now moved to Europe and Latin America and is likely to reach the rest of the world.

- ***New Entrants***: Given the globalizing effect of the global trends described above, the number of new entrants into the tourism market is ever expanding. New destinations are sought by new entrants. Moreover, destinations are becoming world-class competitors in record time. As a result, the tourism industry is likely to remain highly competitive and volatile.

- ***Use of Internet:*** The Internet is becoming an increasingly important medium for information dissemination and bookings. Therefore, countries have to remain up to date on Internet based information venues and client services.

- ***Changing Nature of Distribution Channels:*** With the increase use of the Internet, travel agencies are becoming less relevant in travel and tourism. Destinations are now developing strategic alliances with Internet portals and consolidator services.

- ***Importance of Options at Destinations:*** It is increasingly important to provide a diversified product with choices, particularly for travelling families. A comprehensive portfolio of attractions can also even out seasonality.

- ***Expansion of Educational Vacations:*** The aging populations in the West and Far East are increasingly interested in vacations with a learning or cultural component. There is also a blurring of distinctions between entertainment and education, particularly among younger generations, which are now more highly educated the prior generations.

Destinations that do not adjust to these global trends and specific tourism trends will undoubtedly suffer. Competitive destinations will be characterized by certain characteristics that have implications for the development of the workforce. Several of these characteristics and the workforce implications are listed below:

- ***Strategic Tourism Marketing & Promotion:*** Traditional marketing consists of promoting the assets a region presently possesses. Strategic marketing consists of identifying a desirable market and developing the attractions to meet the market. Promotion and marketing can significantly alter a destination's market share. The increasing competition among destinations is necessitating larger marketing budgets in order to, at a minimum, retain current market shares. "Branding" is also a key promotion and marketing tool. Successful branders have an image that permeates all their promotional materials and marketing messages.

Strategic marketing and promoting will be the key to greater Egyptian competitiveness. However, in order develop identified targeted markets, the Egyptian tourism cluster will need skilled workers for these new market niches. For example, if the Egyptian tourism cluster chooses to pursue an eco-tourism market at the Red Sea, it might need to train guides in environmental issues, and hotel staff in conservation techniques.

- ***Strategic Alliances****:* Partnerships between diverse segments of the tourism cluster enable destinations to stretch their marketing budgets, improve their product offering, capitalize on partners' strengths and image, and provide learning opportunities. In order for tourism firms to create successful alliances across segments, workers will need greater tourism awareness of the tasks each segment performs and, in some cases, the ability to perform those same tasks. For example, if a tour operator partners with a hotel, the tour operator employee will need to understand and communicate the products and services of the hotel.

- ***Awareness of Competition****:* As more regions are developing tourism clusters, and the competition becomes fiercer, destinations will increasingly need to have good information on the activities of their competitors, to assess their own current and future competitiveness, and to undertake activities that will keep them on top. For workers this signifies the ability to be aware of the marketplace, collect and analyze data, and then quickly adjust the firm's products and services to remain competitive.

- ***Quality Control***: Successful destinations and cluster segments guard their quality and reputation. High environmental standards and regulatory requirements are some examples of ways that governments and their private sector partners achieve this quality. However, true quality control in Egypt will be focused at the workforce level. Skills such as health and hygiene and a customer first orientation will be crucial for the Egyptian tourism cluster to gain increased competitiveness.

4.4 Skills Gap: Initial Stakeholder Observations

Through interviews and focus groups during the first mission trip, tourism cluster stakeholders sighted numerous concerns and constraints to the cluster's workforce development and ultimately to its competitiveness. This list is not in any particular order of priority, and several observations need to be verified through further interviews and research. The WDS Team presents them in this section to provide some context to issues heard through the first mission.

Management-level Needs:

- ***Mid-Level Hotel Management:*** The projected growth in the hotel industry in the coming five years, will increase the now current dearth of qualified managers and assistant managers. While in the international hotels these staff members are traditionally developed in-house, there does not seem to be enough "raw material" at this point within the sector for internal development. Hotels also need to train their existing management staff beyond the capabilities of the hotels. Whenever there is such a need, such people are sent abroad to Hotel Management and Hospitality schools

such as Cornell University's. This, of course, is beyond the budgetary means of most domestic and non-five-star hotels in the country. Stakeholders mentioned the need for a local sophisticated hospitality management program would help improve the level of hospitality service in the country.

- ***Strategic Tourism Developers:*** In many countries in the world where tourism is a significant part of the economy, there exist "Tourism Industry" programs, generally at the university and graduate level, but also some shorter-term "executive" programs. These programs develop tourism developers. These individuals go on to staff the government tourism entities, the strategic and promotional departments of local hotels, tourism association staff, and the management level positions of travel operators. According to tourism stakeholders, in Egypt, people currently staffing these positions lack knowledge of strategic marketing, market segmentation, positioning strategies, sustainable tourism development, tourism market research and general promotion that are necessary to strategically place Egypt's tourism product in the international market.

Technical and Entry-level Positions

- ***Nature Tour Guides:*** Tour guides in Egypt have traditionally focused on the country's archeological assets. However, much of the expected growth in the tourism industry in the coming years is likely to come from nature tourism related to the Red Sea and the Sahara. Guides need to be trained to properly interpret such attractions to new types of in-coming tourists.
- ***Cooks/kitchen help/bar tenders/wait staff:*** Restaurants in Egypt already lack the types of qualified personnel necessary for a high quality type of product. With expected growth in tourism, the needs will certainly increase. Current programs are not developing students with anywhere near the skills necessary for the restaurant industry.
- ***Entry-level Hotel Personnel:*** The already mentioned expected growth in the industry will increase the need for properly trained front office personnel and other types of entry-level staff.

General Skills:

- ***Languages:*** The language skills of the local tourism labor pool are lacking. Hospitality and tourism schools graduate students whose language skills make them barely able to communicate with non-Arabic speaking tourists. While there is a need for improving the oral communication skill levels in all languages, English is the most important second language. Moreover, efforts at attracting Asian tourists would be more productive if there were more Egyptians in key positions (hotel concierges and travel guides, for example) that could communicate with these tourists, who traditionally travel in groups.
- ***Basic Computer Skills:*** The hospitality industry worldwide suffers from skill gaps in computer literacy. Virtually every position in hotels in international hotels now require staff that can work within a Windows environment. Cooks, wait staff and bartenders need these skills as well, as inventory and menus are now generally managed through software programs.

5. INFORMATION TECHNOLOGY CLUSTER

At the First National Information Technology (IT) Conference in Cairo (September 13-14, 1999), President Mubarak outlined his six priorities for the IT industry. One of these priorities was human resource development. As a result of this speech, and previous requests to U.S. Vice President Gore for help with the development of Egypt's IT industry, this cluster's competitiveness is recognized as a high-priority among Egyptians, and at USAID. In the context of this task, the WDS Team is looking specifically at workforce development strategies that will assist with greater competitiveness.

5.1 Demarcating the Cluster

Information technology is a new and changing frontier around the world and in Egypt. The WDS Team began its demarcation process by identifying all of the potential segments that could be included within an IT cluster. These include the following:

- Development of software
- Arabization of software
- Personal computer assembly
- Multimedia
- Data Communications
- Data Management Systems
- Value added resellers (VAR)
- Internet service provider (ISP)
- Consulting services
- Systems Integration
- Training and education

In order to identify the high-impact segments within the Egyptian environment, the WDS Team initially utilized the criteria listed in Section 2. In exploring this cluster the WDS Team also used two additional screens:

- Segments already having a market presence in Egypt
- Segments necessary to develop for cluster global competitiveness

With these questions in mind, the interviews and research initially led the WDS Team to the software segment. There are some 400 local companies in the software business in Egypt, mostly located in Cairo. In 1998 the software companies had a market share of $ US 681 million, with a reported 32 percent annual growth rate in sales revenues. Thirty to forty software companies have more than 15 employees and the rest have less than 15 employees. The sector also has local representation from multinational companies in Egypt such as IBM, Microsoft, Oracle, etc. Based on our discussions with local companies and the Egypt Software Association, we have found that most of the activities in the IT cluster are in the development of software, Arabization, Distributors and Value Added Resellers (VAR) and Internet (ISP).

5.2 High-Impact Segments

As a result of this initial analysis, the WDS team has chosen to focus this project on four key segments within the IT Cluster:

Development of Software

This is one of the most active segments within this cluster, and it is already competing in the offshore market (less than 1% of the global market). However, the sector will need to raise its standards in order to compete in regional and global markets. The demand from customers in the Middle East including Egypt generates a current need for more software developers (currently only 4000 in Egypt) and creates an ideal opportunity for workforce development. According to initial interviews, proper training institutions for new technology (e.g. Java, Case tools) are absent, but are seen as an essential ingredient to compete for new domestic and offshore markets.

Arabization

This is the other active segment where Egypt captures close to 50 percent of the Arabic market. Most of the revenue of small companies (15 or less employees) comes from this segment. As demand grows for more specialized new worldwide software products, more computer programmer professionals will be needed to satisfy this trend. In addition, there is a need for specialized Arabic-English language translators.

Distributors and Value Added Resellers (VAR)

Many companies already exist that distribute and add value to other software products. They are trained and certified by product manufacturers, however there is a big demand for more products from different areas within this cluster. Workforce development needs within this segment includes software developers, trainers, technical support specialists and maintenance (new versions) for the new products.

Internet Based Technologies

There are more than 40 Internet service providers (ISP) currently in Egypt. The global trend is driven by this technology and will benefit others segments as well. There are 125,000 Internet accounts in Egypt and the exponential growth within this segment makes it an excellent opportunity for local companies to develop new market trends. Egypt and the Middle East are not isolated from this new technology and new companies will arise. Although e-commerce does not have a real presence in the local market, Egyptian companies are showing interest in participating directly in this technology.

5.3 Global Market Trends & Workforce Implications

Internet Technology

The global market trend for the IT industry is driven by Internet based technologies, such as e-mail, the Worldwide Web, search engines, and e-commerce. Around the world, online transactions have been one way for companies to expand their business across borders and conduct business 24 hours a day, anywhere in the world. The Internet also can open up doors to find and utilize suppliers and retailers abroad.

From desktop publishing and office automation to multimedia and e-commerce, the IT industry is the high-tech engine transforming business. A global manufacturing network from all over the world supplies corporations, small and medium-size business, manufacturing, financial institutions, government agencies and PC users everywhere with the latest IT has to offer.

The vast potential of the Internet in Egypt, however, is dependent on the workforce developing the necessary skill sets to build, operate, and maintain this technology. This development has the potential to occur at different stages: technology awareness and basic use at the primary and secondary level; technical design in universities and technical schools; and private sector firms' training programs that tailor the basic skills to a fit the company's unique IT needs.

Management Information Systems

In addition to the use of Internet technology, global companies are implementing tailored Management Information Systems (MIS) for such business activities as financial and accounting systems. These systems allow firms to quickly update information and respond to clients' needs at a faster pace. These systems are heavily based on the use of hardware, software, and network solution. As prices for these systems decrease, the expectation is that businesses around the globe, including Egypt, will be able to operate quickly and effectively using them. Egyptian companies appear aware that affordable systems will help them automate their businesses. Further domestic demand within such entities as education providers, government purchasers, small businesses and consumers will grow this MIS component within Egypt's IT cluster. Once again, in order for the IT cluster to increase its competitiveness, skills workers need to understand how to develop, operate, and maintain these systems while continuing to innovate in order to stay up with the competition.

Venture Capital

Due to the high-growth, high-risk nature of information technology, successful IT clusters have developed with a heavy reliance on risk or venture capital to finance development of new technologies. Specialized venture capitalists are willing to invest in new products and services within this cluster. However, only if the Egyptian IT cluster can create skilled, innovative workers, who can create new technology, will new financing mechanisms such as venture capital be either developed domestically, or be offered from international sources.

5.4 Skills Gaps: Initial Stakeholder Observations

What areas do the Egyptian stakeholders believe they need to develop in order to compete in this global market? According to stakeholders the WDS Team interviewed, there is a noticeable lack of strategic planning, managerial skills, and limited marketing skills at the management level of the IT cluster. At the supervisory level, the Team found underdeveloped business analysis skills, and limited delegation and project management skills (regarding the software development segment in particular). At the technical level

we found a lack of technical skills in new technologies due to the weak present demand for IT in Egypt.

6. SUPPLY SIDE METHODOLOGY: CLUSTER TRAINING PROVIDERS

A key part of the Workforce Strategic Planning Process is to identify and strengthen the linkages between the private sector's demand for a more qualified workforce, and the supply sides ability to provide workers with the correct skill sets. During this first mission, the WDS Team began to identify and interview the supply-side stakeholders in each of the three clusters.

In order to conduct this supply-side analysis, the WDS Team seeks to interview approximately 15 training providers that provide services specific to the three clusters: 1) agribusiness, 2.) tourism and 3) information technology. Generalized training providers have already been studied by USAID and it was thought that a focus on sector-specific trainers would be more fruitful in terms of making the cluster's workforce strategies more tailored to the cluster's needs.[3] The cluster specific supply-side interviews have been identified primarily from cluster private sector interviews.

Just as the WDS Team used a set methodology to demarcate the high-impact segments of each cluster, the Team is also focusing on specific supply-side issues. The approach focuses on several critical areas:

- Existing capacity of training providers;
- Linkages with the private sector;
- Teaching methods
- Teaching content; and
- Capacity for upgrading.

Each of these issues is presented in the sections below along with critical questions. The selection of these issues does not preclude the WDS Team from exploring additional supply-side topics raised by stakeholders. Instead these are used as tool to focus the WDS Team's research.

6.1 Existing Capacity

The first part of the methodology focuses on quantitative indicators and descriptive presentations of the training providers. This involves gathering information on the kinds of programs offered (degree, certificate and non-certificate), duration of program, average cost, number of students and participants trained last year, number of full-time and part-time faculty and the years of operation. It also involves a description of the observed physical facilities and the numbers of computers. This initial assessment will provide a good base of useful information. The WDS Team will also determine whether there is an existing directory of training providers as this can help to build an industry cluster.

[3] See, for example, "Management and Marketing Training Needs for the 21st Century" conducted by SRI International for USAID/Egypt, June 15, 1998 and also "Supply Assessment of Management and Marketing Training in Egypt" by SRI International, June 1998 – both performed by the GTG Monitoring and Evaluation Unit.

6.2 Linkages with Private Sector

The next part of the methodology focuses on how the educational institutions or training providers interact with the industry they serve. The most important element is the method by which they conduct demand assessment. It also includes their procedures for evaluating course relevance and upgrading subsequent offerings. Other linkage mechanisms to be analyzed include placement programs, use of trainers from the industry, industry participation in curriculum review, internships, student projects with industry, alumni programs and faculty consulting activity. Reliance on courses paid by the private sector and overall sources of financing for programs is another good indicator of linkages. On the basis of this assessment, opportunities to improve the linkages will be identified. At the same time, these findings will be compared with the findings from industry interviews from the various clusters.

6.3 Teaching Methods

This section of the methodology looks at the existing teaching methods and how to improve them. The WDS Team will assess whether the pedagogy is based largely on "chalk and talk" lecture formats with passive learning or whether active learning methods have been incorporated and to what extent they are used. Active learning methods include case studies, simulations, team projects, interactive class discussions, use of the Socratic method, field visits, role playing and interactive use of computers and other media. Student evaluation systems often reveal the nature of teaching methods and these will be reviewed. Are students evaluated on the basis of one final exam covering lecture notes or are they graded on class participation, projects and term papers as well? These reveal the underlying values of an educational program.

6.4 Teaching Content

This issue focuses on the key areas of content and how these are determined, upgraded and kept relevant. How do those providing training keep up with their field? The focus will not only be on the content but also on the process by which this content is upgraded. If there are international sources for teaching content or informal relationships with colleagues abroad that influence content, these too will be noted. The team will ask which are the leading institutions that the private sector regards as leaders that provide the skilled workers needed at diverse levels.

6.5 Capacity for Upgrading and Recommendations

This section will focus on ways to improve the above elements. The team will assess interest, elicit feedback and test ideas on ways to improve private sector linkages, upgrade teaching staff and improve teaching content. Based on earlier assessments and initial interviews, training methods are generally traditional, lecture format and based on passive learning and absorption of content rather than acquisition of higher-order skills and functions. This assumption will be tested.

Possibilities for upgrading teacher skills will be explored. These include teacher training institutes, formation of linkages with world-class training centers abroad, sending teachers to leading international centers for a semester or a year, using bright young Arabic speaking graduates of leading institutions as short-term faculty.

In general, the WDS Team will focus not only on the existing situation, but also on the awareness of current deficiencies and the interest and capacity for taking or responding to initiatives to upgrade the training industry by continually enhancing the relevance and financial sustainability. The team will identify pro-active measures for improving the training industry and the interest of current training providers in responding to them.

APPENDIX A: Cluster Interviews During Field Mission I

TRAINING PROVIDERS:

Date & Time	Interview	Participant	Contact Information
9/29/99 11-3	OUDA (UNDP Training Project	Dr. Ali El-Meligui	578-6705
9/29/1999 12 :00	International Center for Human Rsources Development	Aliaa El Serafy	578-2763
9/29 2 :00	International Professional Education Center	« «	
9/22/99 11 :00	Faculty of Agriculture, University of Cairo	Mr. Nabih Abdel Hamid The Food Research Institute	(012) 341-1748
9/21/99 2 :00	Center for Adult and Continuing Education AMERICAN UNIVERSITY OF CAIRO	Dr. Harry Miller, Dean	
9/21/99 10 :00 a.m.	Information Technology Institute	Mr. Nabil el-Said	241 El Haram (Pyramid) Road, Giza (also at 14 Mina Street in Roushdy, Alexandria 386-8420
9/28/99 2 :00 p.m.	Helwan University Faculty of Tourism and Hotel Management	Dr. Hassan Sherif	349-6066
9/28/99 3 :00	Helway University Faculty of Tourism and Hotel Management	Ali Omar Abdalla Dean	365-2795
9/26/99 10 a.m.	6th of October Institute of Tourism and Hotel Management	Ms. Salawa El Tokhy	011-334-002
9/22/99 2 :30 a.m.	USAID Project Linking Training to Private Sector through Pilotssb	John Dalton	

AGRIBUSINESS:

Date & Time	Interview	Participant	Contact Information
9/20/99 1.00 pm	USAID		
9/20/99 3.00 pm	USAID	Dr. Tarek Shata	
9/21/99 10.00 am	ALEB Focus Group: Processed Food	Tarek Tawlik Farm Friters; Derryk Cox. International Trade Promotions; Iman Kamel, Montana; Sahar Nazmy, Halvani Bros.	015 362967 1 212 972 2770 02 337-5408 15 369520
9/21/99 3.00 pm	Egyptian Dairy Association	Raouf Hamawy	3322674
9/22/99 11.00am	Food Technology Research Institute Agricultural Research Center	Dr. Nabih A. I brahim	2 571-8324
9/23/99 10.00 am	U,S Embassy	Thomas Pomeroy; Dr. Hassan F. Ahmed	357-2388 357--2388
9/26/99 6.00 pm	Horticulture Export Association	Amr. M. M. El Tonsy; Hussein El Aguizy; Mohamed Ayman Korra; Bahei El-Din El-Baroudy Dr. David Delgato	338308 3 Yaman St. Giza 2 3383080 2 3383080 ALEB
9/27/99 10 am	USAID	Dr. Mohamed A, Sherif Omran	
9/27/99 1.00pm	Agricultural Technology Utilization & Transfer	Dr. Ali A. El-Saied	2 5728563
9/28/99	Kaha Co. Preserved Food	Ahmed Auf	2 390 1480

INFORMATION TECHNOLOGY:

Date and	Interview	Participant	Contact

Time			Information
09-16-99 2:00 PM	Micro Tech	Agharid Amin	361-1525 361-0907
09-19-99 10:30 AM	Information Systems Int'l Services (ISIS)	Alaa Al-Agamawi	202 508-5771 202 508-7439 202 508-8786
09-20-99 10:00 AM	Kemmet	Aly Madkour	291-7529
09-20-99 1:00 PM	USAID		
09-21-99 4:00 PM	ISG	Dr. Adel Ghannam	360-1565
09-21-99 8:00 PM	Egyptian Software Association (ESG)	Future Soft / Hamed Al-Maghlwi Khlifa Computer Group / A. Khalifa ISG / Adel Ghannam Delta Computer / Dr. Alaa Fhany Arabize Comp. Services / Manal Amin Ideal Software Sys. / Mohamed Nasser ISIS / Alaa Al-Agamawi (chairman)	402-6987 383-7794 360-1565 246-7338 402-1157 360-9744 508-5771
09-22-99 10:00 AM	DMS	Madgy K. Khairallah Mohamed Nasr Khairy	202 266-7419
09-26-99 10:00 AM	ITI	Dr. Mohamed Salem Dr. Nabil.Said	386-8420/26
09-28-99 4:00 PM	Systems Engineering of Egypt	Dr. A. H. El Sawy	202 291 1100
09-29-99 10:00 AM	The American University in Cairo	Dr. Hoda M. Hosny	202 357-5314
09-30-99 8:00 AM	Microsoft Egypt	Ali M. Faramawy	202 594-2445
09-30-99 10:30 AM	NileSoft	Dr. Abdel-Hamid Abed	202 416-4201 202 416-4202
09-30-99 2:15 PM	ACT	Sayed Ismael	346-7831 344-3725

TOURISM:

Date and Time	Interview	Participant	Contact Information
9/10/99 2:30 pm	Thomason Holidays	Nigel Galbraith, General Manager	341-3872
9/13/99 10:00 am	Sheouq Airlines	Galal el Din Karara, General Manager	417-2314
9/21/99 11 am	ECES	Adrian Swincoe, Fellow	578-1202
9/21/99 3 pm	Accor Hotels	Abd El Hakim Hussein, Human Resources Director	578-2061
9/22/99 11 am	Egyptian Hotel Association	Bahgat Badaway, Director of Marketing, Promotion and Training	335-2134
9/22/99 12 pm	Egyptian Federation of Tourist Chambers	Ahmed El-Khadem, General Manager	348-3313
9/23/99 10 am	Le Meridien	Akram Zaghloul, Personnel Manager	362-1927
9/23/99 1 pm	Tourism Development Authority/Sheraton	Magda Samy, General Coordinator of Policy Implementation Unit/Public Relations Director of Cairo Sheraton	336-4465
9/23/99 2 pm (phone interview)	Tourism Development Authority	Adel Rady, President	570-3490
9/23/99 4 pm	Marriott	Ahmed Hany, Training Co-ordinator	340-8888
9/26/99 11 am	ECES	Dr. Samiha,Fawzi, Principal Economist	578-1202
9/27/99 10:30 am	Subcommitttee IV: Education and Human Resources Development – Gore/Mubarak Partnership	John Dalton, Chief of Party, Academy for Educational Development	594-0862

9/28/99 1 pm	US Embassy	Richard Lebaron, Economic Officer	Through embassy main number
9/28/99 3 pm	Helwan University	Dr. Hassan Sherif, Assist. Prof. Faculty of Tourism and Hotel Management	349-6066
9/28/99 4 pm	Helwan University	Ali Omar Abdallah, Dean of Faculty of Tourism and Hotel Management	365-2795
9/29/99 11 am	Social Fund for Development	Sherif A. Mashhour and staff, Human Resources Development Program	354-2047
9/29/99 2 pm	Egyptian Travel Agents Association	Riad Kabil, Secretary General	335-6443

TOURISM CLUSTER FOCUS GROUP			
Date	**Institution**	**Participant**	**Contact Information**
9/28/99 8:30-11 am	Gezira Travel	Dr. Nader El Biblawi, Vice President & General Manager	341-0585
	Subcommitte IV: Education and Human Resource Development Gore-Mubarak Partnership	Madiha A. Nasr, Education Specialist	594-0862
	Sonesta Hotels, Resorts and Nile Cruises	Mahmoud El Maghraby, Regional Financial Controller	418-3539
	Emeco Travel	Elhamy El Zayat, Chairman and CEO	574-9360
	Europcar	Alaa Hafez, Chairman and Managing Director	303-5630
	Marriott	Soliman El Hakim, Training Manager	340-8888
	Hilton International	Ahmed El Nahas, Vice President Middle East and Africa	574-4400
	Americana Restaurants	Mahmoud, El Kaissouni,	304-7406 (fax)

		Manager (?)	

APPENDIX B: Potential Information Technology Actions

MEMORANDUM

TO: Steve Brent, USAID/Egypt

FROM: PwC/SRI International Workforce Development Strategies Team

SUBJECT: Information Technology Cluster Activities

DATE: September 21, 1999

Introduction

On Thursday, September 16, 1999 the USAID / Egypt Workforce Development Strategy Team asked the PricewaterhouseCoopers/SRI International Workforce Development Strategies Team (WDS Team) to develop a menu of strategic actions and activities that USAID could undertake to support the development of the information technology (IT) cluster. The purpose of this memorandum is to respond to this request.

The WDS Team is just beginning its analysis and stakeholder strategic planning process within Egypt's IT cluster. At this time, this limited analysis includes desk research and initial interviews with several IT stakeholders (see *Annex I* for list of interviews). As a result of this limited research, the actions and activities described below are the preliminary findings of the WDS Team and do not necessarily represent the priorities of the Egyptian IT cluster. The need and priority of these actions and activities will be confirmed throughout the Workforce Strategic Planning Process.

Background on the Egyptian IT Industry

The Information Technology industry in Egypt is an emerging industry cluster in Egypt with relatively new firms operating in different segments of the industry **including:**

- software development;
- networking systems;
- maintenance/repair;
- data processing;
- telecommunication equipment/service providers;
- multimedia/web page development;
- Internet service providers; and
- IT consultants/training companies.

There are some 400 local companies in the software business in Egypt mostly located in Cairo with a market share of 681 million dollars and 32% annual growth. Sixty percent of the PC market is assembled in Egypt. Thirty to forty software companies have more than 15 employees and the rest have less than 15 employees. There are offices from multinational companies in Egypt such as IBM, Microsoft, Oracle etc. Multinational companies have won most of the Government contracts

as well as major contracts for the biggest industries. Local companies with more than 15 employees are subcontracted by the multinational to perform training, customization**, Arabization** and maintenance. The market share is as follows according to the Egypt Software Association:

Percentage of the market	Companies
60%	Multinational plus locals with more than 15 employees
25%	More than 15 employees
15%	Less than 15 employees

In the export sector such as offshore development the market share is as follows:

Percentage of the market	Companies
80%	Less than 15 employees
20%	More than 15 employees

From our discussions with local companies and the Egypt Software Association, we have found that most of the activities in the IT arena are in the offshore software development, customization of software products (including Arabization) software development for small solutions and Value Added Resellers (VARs). There are approximately 150,000 Internet accounts in Egypt, mostly with modem connections. Overall there are some 4000 professional software developers and a large demand for them.

Competitive Advantages for IT industry

There is large and growing demand for IT products and services in Egypt and the Middle East region. Egypt has emerged as a low cost location for software products, particularly those tailored to the Middle East market.

Constraints to Growth in IT industry

There is an overall lack of managerial, supervisory and technical skills. Ongoing technologies cannot cope with training requirements. Infrastructure is scarce and the one that exist is highly costly an outdated. Government regulations slows the import of the latest IT products into Egypt.

Associations in IT industry

- Egypt Software Association
- Egypt HiTech Association
- Internet Association
- Hardware Association

Action Plan Recommended by Egypt Software Association

- Enhancing the demand side through an educational process.
- Government funding
- Establishing training institutes
- Data communication infrastructure
- Adopting marketing strategies for offshore software development.

- Reviewing customs laws, policies and standardized procedures for software products made in Egypt (ISO)

Potential Actions & Activities Suggested by the WDS Team

Human Resource Competitiveness. Under this initiative, a center for excellence would be established to provide cutting edge degree and short course practical training in computer programming (e.g., C++, Java, and Visual Basic, Microsoft Certified Engineer-MCE) network administrator (e.g, Novell Certified Engineer-- CNA) and database management (e.g., Data Base Administration -- DBA) The center for excellence could also develop distance-learning programs through the Internet and other technologies. In addition Egyptian managers would be trained in how to utilize information systems more effectively to enhance overall firm competitiveness and improve management information.

Domestic Demand-Side Development. This initiative focuses on promoting strong **local demand** for Egyptian IT industry products and services. The market awareness program would include seminars, publicity, and other demand stimulation programs. It will be concentrated on four principal Egyptian market segments: government procurement; education institutions (K-12, universities, colleges and training institutes); Egyptian business (USAID related activities could focus first on tourism and agribusiness clusters); and Egyptian consumers.

Internet E-Business Initiative. This activity would work on developing Internet/E-Business use by Egyptian firms. This would be a training/technical assistance activity aimed at encouraging Internet use/development by Egyptian firms for market information/research, integration with suppliers, customers, internal information systems, training, and selling products, and Web enabling applications.

Teleport/Offhore Information Initiative. Under this action, private developers would be targeted for investment opportunities in teleports. This activity includes the provision of telecommunications infrastructure to support offshore information processing activities, such as data processing, telemarketing, customer support, etc.

Technology Parks/Incubators. Software development incubators or technology parks could be established at local universities to help incubate technologies and embryonic companies. Under this success model from other countries (Israel, United States, Ireland) incubators would serve as an effective interaction point between research and technology from the university and business start-ups from industry.

IT Policy Framework. Policy refinements are needed to provide Egypt with a world-class IT cluster support foundation. Experience from Ireland, Scotland, and India suggest that copyright laws and protection including enforcement and adjudication need to be very strict in order to encourage necessary research and development innovation and foreign investment in this cluster. Other policy changes which need to be urgently addressed by the Egyptian government include reducing costs and charges for bandwidth. Import tariff policies on IT/telecommunications equipment need to be reduced and dramatically streamlined in order for Egypt to become competitive in the fast-moving IT sector.

Infrastructure. This action step aims to increasing the availability of high-speed, high bandwidth telecommunications lines. The industry, universities, governments and telecommunications providers would designate priority areas.

ANNEX I: Interviews in the Information Technology Cluster

- Micro-Tech, private software developer
- ISIS, private software developer
- Kemet, private software developer
- ISG, private software developer
- Data Management Systems, private software developer.
- Hi-Tech Association, software association
- Egyptian Software Association